

THE STATUS OF *STELIS BREVIUSCULA* (NYLANDER)
(HYMENOPTERA: APIDAE) IN BRITAIN, WITH A KEY
TO THE BRITISH SPECIES OF *STELIS*

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The small, kleptoparasitic megachiline bee *Stelis breviscula* (Nylander) was added to the British list by Else & Spooner (*in Shirt*, 1987) and Falk (1991) from two specimens collected in West Sussex in 1984 and 1985 by myself and M. Edwards respectively. Since Falk's publication, further specimens have been found in the same county, bringing the number of sites there to five. In addition the species has also been recorded recently from two sites in Surrey. The present paper documents the discovery of all known British specimens and provides details of the species' habits, both in this country and on the continent. A key for the identification of the four species of *Stelis* known from the British Isles is also presented.

S. breviscula fulfils the criteria of an RDB 1 species in Britain, i.e. an endangered Red Data Book species (Else & Spooner *in Shirt*, 1987).

DISTRIBUTION

Whilst recording aculeate Hymenoptera at Stedham and Iping Commons, to the west of Midhurst, West Sussex, on 8 August 1984, I came across a small bee at rest on a flower of *Senecio jacobaea* L., on the perimeter of the Iping Common car park (SU853220). Identification in the field suggested that it was a small example of the rare *Stelis phaeoptera* (Kirby), a species which I had not previously found in Britain. However, subsequent examination cast doubt on this initial determination and a check later in the *Stelis* collection in The Natural History Museum, London, finally resolved the identification as a male *S. breviscula* (Nylander), a species not hitherto known from Britain. In Europe, the species is reported to be a kleptoparasite of the megachiline bee *Heriades truncorum* (L.) (e.g. Stoeckert, 1933; van der Zanden, 1982; Westrich, 1989). The latter species had been found in the early 1980s, in very small numbers (mostly visiting yellow Asteraceae flowers), on the eastern edge of Stedham Common, about a hundred metres east from the spot where the *S. breviscula* was collected.

In the following year, on 24th July, M. Edwards collected a male *S. breviscula*, visiting the flowers of a *Hieracium* species, at Midhurst Common (SU877209), to the south of the town. I obtained a further male, visiting *S. jacobaea* flowers, on the roadside very near there on 5 August 1990. On 25 August 1991, M. Edwards, A. Davidson and I collected aculeates at Marina Farm (SU755050), south of Emsworth, on the coast immediately north-west of Thorney Island, West Sussex. There M. Edwards found an *H. truncorum* visiting a *Pulicaria dysenterica* (L.) flower, whilst I obtained a male *S. breviscula* close by, visiting a flower of the same species. Since then I have found numbers of *S. breviscula* in the same site. These records are summarized as follows (unless otherwise stated, specimens were found at rest on wooden fence posts): a pair, 25 July 1992; three females and three females, 28 July 1993; three females, three males, 28 July 1996; a female, 8 June 1997 (a very early date for the species); a male, 5 July 1997; and about thirty individuals (both sexes), 14 July 1997 (mostly on wooden fence posts, but two females were visiting *S.*

jacobaea and a further specimen visiting another yellow Asteraceae flower). Thirty specimens is an astonishing number for any *Stelis* species in a single site on one date (of interest, seventeen *H. truncorum* were found on the same occasion, mostly on fence posts, and included a pair in cop.).

In 1997 I found further specimens nearby at Thornham Point (SU764044), on the north-east coast of Thorney Island: a male on a wooden fence post on 8 July, and a female and male visiting *S. jacobaea* flowers on 23 July.

C. W. Plant (pers. comm.) swept a male *S. breviscula* from a streamside near Warnham, West Sussex (TQ1634), on 27 June 1995. The following year D. Baldock (pers. comm.) collected a female from *S. jacobaea* flowers at Wyke Common (Ash Ranges), Surrey (SU915525), on 16 August, and a female and male there on 24 July 1997. He collected a further female in Sidney Wood, Dunsfold, Surrey (TQ021346), on 7 July 1997. *H. truncorum* also occurred in both these Surrey sites.

In the field *S. breviscula* closely resembles its host species. The *Stelis* is widely distributed on the Continent, its range extending from southern Finland south to Iberia, and east to Greece. It is also known from North Africa (Algeria and Egypt).

NESTING HABITS AND FLIGHT PERIOD

The species should be sought wherever *H. truncorum* is established. The latter is a very local bee in Britain, apparently restricted to the south-eastern counties of Buckinghamshire, Hampshire, Greater London, Surrey and West Sussex: there is an unconfirmed record from Essex (Smith, 1846). On the Continent it is a common and very widely distributed species, except in the far north. It nests in holes in dead wood (Nevinson, 1907; Currie, 1954; Yarrow, 1954), and has been observed nesting in dead, broken *Rubus* stems at Oxshott Common, Surrey (D. B. Baker, pers. comm.); specimens have also been observed flying about masonry in Midhurst (M. Edwards, pers. comm.), suggesting that this bee may also nest in suitable fissures in brick walls. Female *H. truncorum* have been reported to utilize *Pinus* resin in their nest construction (Correia, 1976, 1977), though this has not been confirmed for British nests. Nevinson (1907), however, observed a specimen with a lump of unidentified resin adhering to its jaws. Because of its association with pine, Falk (1991) questions the indigenous status of *H. truncorum* in Britain. This is a view based on his premise that *Pinus sylvestris* L. is not native to southern England. He considers it likely that *S. breviscula* is a recent introduction or colonist from Europe. However, M. Edwards and I have encountered *H. truncorum* in some West Sussex sites which supported no pine (Amberley Wild Brooks, Cocking, and Marina Farm). It is possible that in the absence of pine, resin may be obtained from such shrubs as *Ononis*. There is no evidence to support the supposition that *S. breviscula* is a recent arrival from elsewhere in Europe.

Both *S. breviscula* and *H. truncorum* fly as single broods, from late June to August or September.

IDENTIFICATION OF BRITISH *STELIS* SPECIES

S. breviscula most closely resembles *S. phaeoptera* but the majority of specimens of the former are considerably smaller than those of the latter. The four species of British *Stelis* can be identified as follows. Body length is measured in lateral view from the apical margin of the head to the apex of the gaster.

1. Posterior margins of terga 1–4 of gaster with transverse pale yellow bands. Body length 7–11 mm *punctulatissima* (Kirby)
 – Posterior margins of terga 1–4 of gaster entirely black. 2.
2. Terga 1–3 of gaster with a pair of widely separated creamy-yellow spots. Body length 6–8 mm *ornatula* (Klug)
 — Terga 1–3 of gaster entirely black 3.
3. Posterior margins of terga 1–4 of gaster fringed medially with rather dense (particularly in the female), adpressed, silver hairs. Punctures on median portion of tergum 2 of gaster dense, separated by less than a puncture width. Small, slender species, body length 5–7 mm *breviuscula* (Nylander)
 — Posterior margins of terga 1–4 of gaster without median hair fringes. Punctures on median portion of tergum 2 of gaster less dense, separated by a puncture width or more. Larger, robust species, body length 6–10 mm *phaeoptera* (Kirby)

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